

**In the Claims:**

Please amend the claims as indicated below.

Claims 1-3 (Cancelled)

4. (Currently Amended) A method of manufacturing a semiconductor device with a substrate and a semiconductor body which comprises at least one active semiconductor element, wherein, after the semiconductor element has been formed, a layered structure is provided comprising at least one electrically insulating layer or one electrically conductive layer, wherein an opening is formed in the layered structure by means of a patterned photoresist layer and an etch process, wherein residues are formed at the surface of the semiconductor body during the etch process, wherein the photoresist layer is ashed, after the etch process, by means of a treatment with an oxygen-containing compound, after which the surface of the semiconductor body is cleaned using a cleaning agent containing a diluted solution of sulphuric acid and phosphoric acid in demineralized water, and being heated to a temperature above room temperature, as a result of which the residues formed are removed from the surface, characterized in that sulphuric acid is chosen for the acid in the cleaning agent, wherein the phosphoric acid concentration is chosen to range between 0.01 and 5% by weight, ~~and preferably between 0.1 and 1 % by weight.~~

5. (Cancelled)

6. (Currently Amended) A method of manufacturing a semiconductor device with a substrate and a semiconductor body which comprises at least one active semiconductor element, wherein, after the semiconductor element has been formed, a layered structure is provided comprising at least one electrically insulating layer or one electrically conductive layer, wherein an opening is formed in the layered structure by means of a patterned photoresist layer and an etch process, wherein residues are formed at the surface of the semiconductor body during the etch process, wherein the photoresist layer is ashed, after the etch process, by means of a treatment with an oxygen-containing



compound, after which the surface of the semiconductor body is cleaned using a cleaning agent containing a diluted solution of an acid in water and being heated to a temperature above room temperature, as a result of which the residues formed are removed from the surface, characterized in that the cleaning agent contains only a diluted solution of sulphuric acid in water ~~is chosen for the acid in the cleaning agent~~, wherein the temperature is chosen in the range between 20 and 60°C.

Claims 7-15 (Cancelled)

16. (New) A method of manufacturing a semiconductor device having a semiconductor body, the method comprising:

- forming at least one active semiconductor element in the semiconductor body;
- after the semiconductor element has been formed, forming an insulating layer on the semiconductor body;

- forming a conductive layer on the insulating layer;

- forming a patterned photoresist layer on the conductive layer;

- etching an opening in the conductive layer using the patterned photoresist layer, wherein residues are formed at a surface of the semiconductor body during the etching;

and

- cleaning the semiconductor body using a cleaning agent to remove the residues while heating the semiconductor body to a temperature above room temperature, the cleaning agent containing a diluted solution of sulphuric acid and phosphoric acid in water.

17. (New) The method of claim 16, wherein the phosphoric acid in the cleaning agent has a concentration between 0.01 and 5% by weight, and the sulphuric acid in the cleaning agent has a concentration between 0.01 and 10% by weight.

18. (New) The method of claim 16, further comprising, after the step of cleaning, rinsing the semiconductor body with demineralized water.



19. (New) The method of claim 18, wherein the steps of cleaning and rinsing are repeated at least three times.

20. (New) A method of manufacturing a semiconductor device having a semiconductor body, the method comprising:

- forming at least one active semiconductor element in the semiconductor body;
- after the semiconductor element has been formed, forming a first insulating layer on the semiconductor body;
- forming a first metal layer on the insulating layer;
- forming a second metal layer on the first metal layer;
- forming a second insulating layer on the second metal layer;
- forming a patterned photoresist layer on the second insulating layer;
- etching an opening in second insulating layer using the patterned photoresist layer, wherein residues are formed on walls of the opening during the etching; and
- cleaning the semiconductor body using a cleaning agent to remove the residues while heating the semiconductor body to a temperature above room temperature, the cleaning agent containing a diluted solution of sulphuric acid in water.

21. (New) The method of claim 20, further comprising:

- after removing the residues, covering the walls of the opening with a barrier layer and filling the opening with metal to form a via;
- forming a third metal layer on the second insulating layer and on the via;
- etching the third metal layer, wherein further residues are formed during the etching of the third metal layer; and
- cleaning the semiconductor body using the cleaning agent to remove the further residues.

22. (New) The method of claim 20, wherein the cleaning agent contains only a diluted solution of sulphuric acid in water.



23. (New) The method of claim 20, wherein the cleaning agent contains a diluted solution of sulphuric acid and phosphoric acid in demineralized water.

24. (New) The method of claim 23, wherein the phosphoric acid in the cleaning agent has a concentration between 0.01 and 5% by weight, and the sulphuric acid in the cleaning agent has a concentration between 0.01 and 10% by weight.

25. (New) The method of claim 20, further comprising, after the step of cleaning, rinsing the semiconductor body with demineralized water.

26. (New) The method of claim 25, wherein the steps of cleaning and rinsing are repeated at least three times.

27. (New) The method of claim 4, wherein the phosphoric acid in the cleaning agent has a concentration between 0.01 and 5% by weight, and the sulphuric acid in the cleaning agent has a concentration between 0.01 and 10% by weight.